Claims

1. A method of electrostatically coating a pharmaceutical tablet core with a powder material, the powder material including composite particles, each composite particle comprising two or more components having different physical and/or chemical properties.

2. A method according to claim 1, wherein at least 50% by weight of the particles of the powder are composite particles.

3. A method according to claim 1 or claim 2, in which at least 30% by volume of the particles of the powder have a particle size in the range of from 5μm to 25μm.

4. A powder coating material suitable for use in the electrostatic powder coating of a pharmaceutical tablet core, in which the material is pharmaceutically acceptable, is treatable to form a film coating and includes composite particles, the composite particles comprising two or more components having different physical and/or chemical properties and in which at least 30% by volume of the particles of the powder have a particle size in the range of from 5μm to 25μm.

5. A powder coating material suitable for use in the electrostatic powder coating of a pharmaceutical tablet core, in which the material is pharmaceutically acceptable, is treatable to form a film coating and includes composite particles, the composite particles comprising two or more components having different physical and/or chemical properties.

6. A material according to claim 5, in which at least 50% by weight of the particles of the powder are composite particles.

7. A material according to claim 5 or claim 6, in which at least 30% by volume of the particles of the powder have a particle size in the range of from 5μm to 25μm.

8. A material according to any preceding claim, in which at least 95% by number of the particles of the

material have a particle size of less than 50μm.

9. A material according to any preceding claim, in which at least 90% by volume of the particles of the material have a particle size of at least 5μm.

10. A material according to any preceding claim, in which the material has a resistivity, in the range of 10^8 to 10^{16} Ωm.

11. A material according to any preceding claim, which is able to be charged triboelectrically and/or by corona charging.

12. A material according to any preceding claim, which is an electret or a magnet or a paramagnet.

13. A material according to any preceding claim, which is susceptible to movement under the action of electrostatic forces, the susceptibility being determined by the test defined herein.

14. A material according to any preceding claim, in which the material is treatable at a temperature of less than 250°C to form a film coating.

15. A material according to claim 14, in which the material is able to be fused to form a film coating at a temperature of less than 250°C at atmospheric pressure.

16. A material according to any preceding claim, in which the material has a melting point in the range of 50°C to 180°C.

17. A material according to claim 16, in which the material has a melting point in the range of 60°C to 100°C.

18. A material according to any preceding claim, in which the material exhibits a glass transition and the softening point of the material is in the range of from 30°C to 180°C.

19. A material according to any preceding claim, in which the material comprises a polymer which is curable to form a cross-linked polymer film.

20. A material according to any preceding claim, which has a moisture content (measured by moisture loss) not

more than 3% by weight based on the weight of the powder coating material.

21. A material according to any preceding claim, including a first component which is fusible to form a continuous film on the surface of the substrate.

22. A material according to claim 21, in which the first component is fusible into a film coating at a temperature of less than 250°C.

23. A material according to claim 21 or claim 22, in which the material includes at least 10% by weight of first component based on the weight of the material.

24. A material according to any of claims 21 to 23, including a second component which is able to be charged triboelectrically.

25. A material according to any of claims 21 to 24, including a second component which is an electret, or a magnet or a paramagnet.

26. A material according to any of claims 21 to 25, including a second component which is susceptible to movement under the action of electrostatic forces, the susceptibility being determined by the test defined herein.

27. A material according to any of claims 24 to 26, in which the second component comprises one or more of the materials in the group comprising polymers of acrylic acid and its derivatives, polyalkenes and their derivatives, polyvinyl alcohols and esters and cellulose and its derivatives.

28. A material according to any of claims 24 to 27, in which the material includes at least 20% by weight of second component based on the weight of the material.

29. A material according to any of claims 21 to 28, including a dispersing component for improving the dispersion of the first component and the second component.

30. A material according to claim 29, in which the dispersing component comprises a surfactant.

31. A material according to claim 29 or claim 30, in which the material includes at least 1% by weight of dispersing component based on the weight of the material.

32. A material according to any preceding claim, including an anti-friction agent.

33. A material according to any preceding claim, in which the material includes a disintegrator.

34. A material according to any preceding claim, including components selected from opacifiers, colourants and flavourings.

35. A material according to any preceding claim, the material including a biologically active material.

36. A material according to claim 35, in which the material includes at least 0.5% by weight of active material based on the weight of the material.

37. A coating material for the electrostatic coating of a pharmaceutical substrate, the coating material including active material.

38. A coating material according to claim 37, wherein the coating material includes at least 0.5% by weight of active material based on the weight of the coating material.

39. A coating material according to claim 37 or claim 38, wherein the coating material is a powder coating material.

40. A coating material according to any of claims 37 to 39, wherein at least 90% by number of the particles of the powder have a particle size not more than 50μm.

41. Use of a coating material comprising active material in the electrostatic coating of a substrate.

42. A method of electrostatically coating a pharmaceutical tablet core with a powder material, the powder material being according to any preceding claim.

43. A method according to claim 42, the method comprising supporting the substrate adjacent to a source of powder coating material with a surface of the substrate maintained at such a different electric

potential from that of the coating material that the application of the electric potential causes the powder to move from the source of the powder towards the substrate and the surface of the substrate becomes coated with the powder coating material.

44. A method according to claim 43, in which the method is carried out as a continuous process.

45. A method according to claim 43 or claim 44, in which the substrate is conveyed on a conveying means through a region adjacent to the source of powder coating material.

46. A method according to any of claims 43 to 45, in which the substrate is charged when the substrate is adjacent the source of powder coating material.

47. A method according to claim 46, in which the source of powder coating material is earthed.

48. A method according to any of claims 43 to 47, in which the substrate is supported from above and the powder moves from the source upwards towards a lower surface of the substrate.

49. A method according to any of claims 43 to 48, in which, before the substrate is supported adjacent to the source of powder coating material, a pretreatment composition is applied to a surface of the substrate.

50. A method according to claim 49, in which the pretreatment composition is a liquid.

51. A method according to claim 50, in which the liquid is polyethylene glycol.

52. A method according to any of claims 43 to 51, in which the method further includes the step that after the surface of the substrate has been coated with the powder, the powder is treated to form a continuous film coating secured to the substrate.

53. A method according to any of claims 43 to 52, in which the method further includes the steps of supporting the coated substrate adjacent a source of powder coating material with an uncoated surface of the substrate exposed and with a surface of the substrate maintained at

a different electric potential from that of the coating material whereby the application of the electric potential causes the powder to move from the source of the powder towards the substrate such that the exposed surface of the substrate becomes coated with the powder coating material.

54. A method of producing powder coating material comprising at least two different components for use in the electrostatic coating of a substrate, the method including the step of co-processing the at least two different components.

55. A powder coating material for use in the electrostatic coating of a substrate, the powder being obtainable by a method according to claim 54.

56. A pharmaceutical tablet comprising a tablet core and a powder coating material as claimed in any of claims 5 to 40.

57. A pharmaceutical tablet that has been electrostatically coated by a method according to any of claims 43 to 53.

58. A powder coating material for use in an electrostatic process, the material having one or more of the following properties:

a) being edible by humans and/or animals,

b) being made up of at least two different components, preferably co-processed,

c) being fusible into a film coating at a temperature of less than 250°C at atmospheric pressure,

d) at least 30% by volume of the particles having a particle size in the range of from 5μm to 20μm,

e) being susceptible to movement under the action of electrostatic forces, the susceptibility being determined by the test defined herein.

59. A method of electrostatically coating a substrate with a powder coating material as claimed in any of claims 5 to 40 or claim 58.